REMARKS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 13-26 are pending. No claims are added, amended or canceled. Therefore, no new matter is introduced.

In the outstanding Office Action, Claims 13-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cromer (U.S. Patent Application Publication No. 2002/0159611) in view of Freeman (U.S. Patent No. 6,970,568) and Cohen (U.S. Patent Application Publication No. 2003/0031333).

The rejection of Claims 13-26 as being unpatentable over Cromer, Freeman and Cohen is respectfully traversed.

Claim 13 is directed to an audio system that provides dynamic sound field adaptation to follow a listener position, where the audio system includes:

> means for determining relative positions of at least one sound emitting component of the audio system with respect to other sound emitting components of the audio system;
>
> means for detecting personal devices associated with at least one user;
>
> means for real-time tracking of positions of the personal devices to produce a current position of each personal device; and
>
> means for re-calibrating a sound field to position a sweet spot of the sound field based on the current positions of the personal devices.

Thus, as noted in the previous response, Claim 13 defines that the system can track personal devices in real-time to continuously monitor the position of those devices and adjust the sweet spot of the sound field accordingly. No reference cited suggests or discloses these features.

As noted previously, Cromer describes a re-configurable multi-dimension sound system (10) having a plurality of speakers (20A-20E) connected to a receiver (18) that can be controlled remotely.[1] The system is reconfigured when a user (12) presses a configuration button (14) on a remote control (16) to optimize speaker delay according to the user's location.[2] Yet, as acknowledged on page 4 of the outstanding Office Action, Cromer does not describe real-time tracking of a user's position. However, the outstanding Office Action asserts that Freeman discloses these features.

Specifically, the outstanding Office Action asserts that Freeman describes determining relative positions of at least one sound emitting component of the audio system with respect to other sound emitting components of the audio system, and real-time tracking of positions of the personal devices to produce a current position of each personal device, as claimed in Claim 13. Contrary to this assertion, however, Freeman describes a system that measures the delay time for a stimulus signal applied to an electro-acoustic system (2) with respect to a measurement point.[3] Then the system calculates a distance between the transducer (6) and the point of measurement.[4] Thus, as explained in the previous response, Freeman only describes an analysis system for accurately measuring the time-of-flight of an audio signal generated in response to a stimulus signal by an electro-acoustic transducer of the system. This allows determination of the distance between the transducer and the measurement point for a particular measurement frequency, but does not allow for determination of a relative position of one sound emitting component with respect to another sound emitting component of the system.[5] In fact, the measurement of a distance is different than a relative position. A relative position cannot be measured by the system of Freeman because the system of Freeman is focused on a time-of-flight measurement between a single

[1] Cromer at paragraph [0011]; see also Figure 1.
[2] Cromer at paragraph [0014]; see also Figure 2.
[3] Freeman at column 3, lines 49-61.
[4] Id.
[5] Freeman at column 3, lines 56-59.

source and a measurement point. Thus, Freeman could not disclose determining relative positions of at least one sound emitting component of the audio system with respect to other sound emitting components of the audio system, as claimed in Claim 13.

Furthermore, the outstanding Office Action asserts that Freeman describes real-time tracking of positions of the personal devices to produce a current position of each personal device at column 4, lines 3-7.[6] However, at column 4, lines 3-7 Freeman merely describes measuring time-of-flight in real-time, which has nothing to do with real-time tracking of positions of a personal device, as claimed in Claim 13. Therefore, Freeman also fails to disclose the claimed real-time tracking of positions of the personal devices as recited in Claim 13.

Moreover, no motivation to combine Cromer with Freeman exists. As conceded in the Office Action of March 21, 2011, Freeman describes minimizing the measurement time through the equipment described therein. However, this does not provide a reason for determining relative positions of sound emitting component with respect to each other as claimed in Claim 13. Determining relative positions of sound emitting components with respect to each other has nothing to do with reduction of measurement times. In contrast, determining the relative position of sound emitting components with respect to each other is required to calibrate the sound field, generated by the sound emitting components themselves and to optimally position the sweet spot of the sound field. Thus, the test equipment described in Freeman is not helpful in this regard as it measures only the distance between a single sound emitting component and a predetermined point. In other words, one of ordinary skill in the art would not have found a motivation to combine Freeman with Cromer, absent impermissible hindsight reconstruction, simply because Freeman nowhere describes determining relative position of sound emitting componentry.

[6] See the outstanding Office Action at page 10.

With respect to Cohen, Cohen describes a system and method for optimizing three-dimensional audio. As illustrated in Figure 7, Cohen describes a listener (11) that holds a remote position sensor (27) to accurately measure the position of the listener with respect to the speakers. Once the measurement is completed, the system manipulates the sound track of each speaker to cause the sweet spot to shift from its original location to the listening position. However, Cohen does not describe detecting personal devices associated with at least one user. The system described in Cohen only takes action when the listener starts a calibration operation.[7] Thus, Cohen does not describe real-time tracking simply because a special calibration operation must be started in order to adjust the sweet spot.[8] Thus, were Cohen to be combined with Cromer and Freeman, the resulting combination would fail to disclose at least determining relative positions of at least one sound emitting component of the audio system with respect to other sound emitting components of the audio system and real-time tracking of positions of the personal devices to produce a current position of each personal device. Therefore, no combination of Cromer, Freeman and Cohen describes every feature recited in Claim 13, and Claim 13 is believed to be in condition for allowance, together with any claim depending therefrom.

Moreover, Claim 26 recites features substantially similar to those recited in Claim 13, and is believed to be in condition for allowance for substantially similar reasons. Accordingly, it is respectfully requested that the rejection of Claims 13-26 under 35 U.S.C. § 103(a) be withdrawn.

[7] See Cohen at paragraph [0046].
[8] Cohen at paragraph [0046].

For the reasons discussed above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance for Claims 13-26 is earnestly solicited.

Respectfully submitted,

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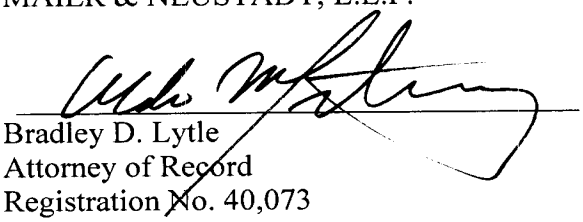

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